

2875  
IFW \$

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Shunpei YAMAZAKI  
Serial No. : 09/871,805  
Filed : June 4, 2001  
Title : LIGHT EMITTING DEVICE

Art Unit : 2875  
Examiner : Dalei Dong

**Mail Stop Amendment**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

REPLY TO ACTION OF MAY 5, 2004

Claims 1-52 are pending with claims 1-4 being independent.

Independent claim 1 and dependent claims 5-15 and 19 have been rejected as being unpatentable over Keyser (U.S. Patent No. 6,072,278) in view of O'Brien ("Improved energy transfer in electrophosphorescent devices", Applied Physics Letters, 1999) and further in view of Baldo ("Very high-efficiency green organic light-emitting devices based on electrophosphorescence", Applied Physics Letters, 1999) and Kono (U.S. Patent No. 6,072,278).

Claim 1 recites a light emitting device having, among other elements, a first EL element for emitting red light, a second EL element for emitting green light, and a third EL element for emitting blue light, and further recites that "a triplet compound is used for the first EL element while a singlet compound is used in each of the second and third EL elements." Applicant requests reconsideration and withdrawal of the rejection of claim 1 and its dependent claims because neither Keyser, O'Brian, Baldo, Kono, nor any combination of these references describes or suggests the claimed combination of three EL elements.

As applicant stated in the response mailed July 31, 2003, Keyser describes a structure for creating an active matrix pixel with a hold capacitor having a high capacitance for very small pixel sizes. As the Examiner admits, Keyser does not describe or suggest a structure having the claimed combination of EL elements. O'Brian and Baldo also fail to describe or suggest the claimed combination of EL elements. O'Brian describes a triplet compound for use in an EL device and Baldo describes a singlet compound for use in an EL device.

The Examiner cites Kono as describing a display device that uses an electroluminescent layer 21 that produces light through participation of singlet and/or triplet states in accordance with the material properties of layer 21. Kono, however, does not describe or suggest a display device that controls light production by *controlling participation of singlet and triplet states based on light color* through selective use of singlet and triplet compounds *in different pixels or EL elements*<sup>1</sup>. In particular, Kono does not describe or suggest a single electroluminescent display device that uses a triplet compound for pixels or EL elements that emit red light and a singlet compound for pixels or EL elements that emit green light or blue light. Moreover, Kono is completely silent as to whether or how the material of the electroluminescent layer 21 varies based on the color of individual pixels or EL elements in the display. Instead, Kono states that the electroluminescent material of layer 21 may vary in color depending on its properties.

Accordingly, neither Keyser, O'Brien, Baldo, Kono, nor any combination of the four describes or suggests the specific combination of using a triplet compound for the red light emitting layer and a singlet compound for the green and blue light emitting layers. Furthermore, as applicant stated in the response mailed January 5, 2004, this specific combination provides an unexpected benefit and is not described or suggested by any of the cited references. For at least these reasons, applicant requests reconsideration and withdrawal of the rejection of claim 1 and its dependent claims.

Independent claims 2-4 and dependent claims 16-18 and 20-52 have been rejected as being unpatentable over Hseuh (U.S. Patent No. 5,932,892) in view of Keyser, O'Brien, Baldo, and Kono.

Claims 2-4 recite light emitting devices having the same combination of EL elements as is recited in claim 1. Hseuh does not remedy the failure of Keyser, O'Brien, Baldo, and Kono to describe or suggest this combination. Accordingly, applicant requests reconsideration and withdrawal of the rejection of claims 2-4 and their dependent claims for the reasons described above.

---

<sup>1</sup> As defined by the specification at lines 18 to 20 on page 3, a triplet compound refers to a compound that emits light through only a triplet excitation, and a singlet compound refers to a compound that emits light through only a singlet excitation.

Applicant : Shunpei YAMAZAKI  
Serial No. : 09/871,805  
Filed : June 4, 2001  
Page : 3 of 3

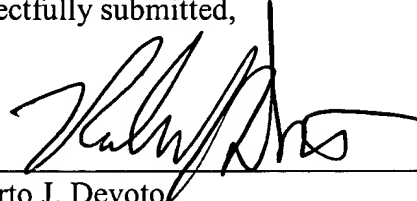
Attorney's Docket No.: 12732-049001 / US4963

Applicant submits that all claims are in condition for allowance.

Enclosed is a \$430 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050.

Date: 10/5/04

Respectfully submitted,



Roberto J. Devoto  
Reg. No. 55,108

Fish & Richardson P.C.  
1425 K Street, N.W.  
11th Floor  
Washington, DC 20005-3500  
Telephone: (202) 783-5070  
Facsimile: (202) 783-2331